

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions, and listings, of claims:

1 1. (Original) A method for use in a mobile communications system having a
2 plurality of cell segments, comprising:

3 communicating control and traffic signaling in a frame having a plurality
4 of time slots in each cell segment, the time slots being time synchronized among the cell
5 segments; and

6 transmitting control signaling in time slots adjacent time slots allocated as
7 guard periods to protect the control signaling in a time slot of a first cell segment from
8 interference by traffic signaling in another time slot of a neighboring cell segment.

1 2. (Original) The method of claim 1, wherein transmitting the control
2 signaling includes transmitting the control signaling in every other time slot of each
3 frame.

1 3. (Original) The method of claim 1, wherein communicating the control and
2 traffic signaling includes communicating the control signaling in odd time slots of each
3 frame.

1 4. (Original) The method of claim 1, wherein each time frame includes time
2 slots 0, 1, 2, 3, 4, 5, 6, and 7, and wherein the transmitting includes transmitting the
3 control signaling in time slots 1, 3, and 5.

1 5. (Original) The method of claim 1, wherein each time frame includes time
2 slots 0, 1, 2, 3, 4, 5, 6, and 7, and wherein the transmitting includes transmitting the
3 control signaling in time slots 1, 3, 5, and 7.

1 6. (Original) The method of claim 1, wherein transmitting the control
2 signaling includes transmitting one of a synchronization burst and a frequency correction
3 burst.

1 7. (Original) A method for use in a mobile communications system having a
2 plurality of cell segments, comprising:

3 defining a plurality of channels and a frame having a plurality of time
4 slots;

5 providing a channel reuse pattern that is based on a plurality of channel
6 frequencies and a plurality of time groups, wherein signaling is transmitted in different
7 time slots of the frame in corresponding time groups; and

8 providing predetermined time slots as guard periods to reduce likelihood
9 of interference of signaling due to overlap of time slots in neighboring cell segments.

1 8. (Original) The method of claim 7, wherein providing time slots as guard
2 periods includes setting the time slots to be idle.

1 9. (Original) The method of claim 7, wherein the defining includes defining a
2 frame having eight time slots.

1 10. (Original) The method of claim 9, further comprising allocating control
2 signaling to be carried in odd time slots of each frame.

1 11. (Currently Amended) A method for use in a mobile communications
2 system, comprising:

3 carrying control signaling in a multiframe that includes a plurality of
4 frames, each frame including a plurality of time slots;

5 communicating control signaling in predetermined time slots of
6 predetermined frames; and

7 communicating idle periods in time slots allocated as guard periods
8 adjacent the predetermined time slots of the predetermined frames.

1 12. (Original) The method of claim 11, wherein each frame includes eight
2 time slots, and wherein communicating the control signaling includes communicating the
3 control signaling in odd time slots of the predetermined frames.

1 13. (Original) The method of claim 12, wherein communicating the idle
2 periods includes communicating the idle periods in even time slots of the predetermined
3 frames.

1 14. (Original) The method of claim 13, wherein each frame includes time slots
2 0, 1, 2, 3, 4, 5, 6, and 7, and wherein communicating the control signaling includes
3 communicating the control signaling in time slots 1, 3, and 5, and communicating the idle
4 periods includes communicating the idle periods in time slots 0, 2, and 4.

1 15. (Original) The method of claim 13, wherein each frame includes time slots
2 0, 1, 2, 3, 4, 5, 6, and 7, and wherein communicating the control signaling includes
3 communicating the control signaling in time slots 1, 3, 5, and 7, and wherein
4 communicating the idle periods includes communicating the idle periods in time slots 0,
5 2, 4, and 6.

1 16. (Original) The method of claim 11, further comprising communicating
2 traffic in at least some of the frames other than the predetermined frames.

1 17. (Original) Apparatus for use in a mobile communications system having a
2 plurality of cell segments, comprising:
3 an interface unit capable of communicating with the cell segments; and
4 a controller adapted to control communications of control and traffic
5 signaling in a frame having a plurality of time slots in each cell segment, the time slots
6 being synchronized among the cell segments, the controller further adapted to define
7 guard periods each including at least one time slot to protect control signaling
8 communicated in a time slot from interference due to overlap of time slots in neighboring
9 cell segments.

1 18. (Original) The apparatus of claim 17, wherein the controller is capable of
2 communicating packet data between a data network and a mobile unit in one of the cell
3 segments.

1 19. (Original) The apparatus of claim 18, further comprising a second
2 controller capable of communicating circuit-switched traffic between mobile units in the
3 cell segments.

1 20. (Original) The apparatus of claim 17, wherein the controller is adapted to
2 define a channel reuse pattern based on frequencies and time groups, control signaling
3 being carried in different time slots of the frame in corresponding time groups.

1 21. (Original) A method for use in a mobile communications system having a
2 plurality of cells each divided into three sectors, comprising:
3 allocating a channel frequency to each cell sector;
4 defining N time groups;
5 defining a frame having eight time slots;
6 providing an effective $N/(3*N)$ channel reuse pattern that is based on the
7 channel frequencies and the plurality of time groups, wherein signaling is carried in a
8 different time slot of the frame in each time group; and
9 allocating predetermined time slots in the frame as guard periods to reduce
10 likelihood of interference of signaling due to overlap of time slots between neighboring
11 cell sectors.

1 22. (Original) A method for use in a mobile communications system having a
2 plurality of cell segments, comprising:
3 measuring control signaling carried in one or more of a plurality of time
4 slots of a frame in a first cell segment and in a neighboring cell segment; and
5 receiving control signaling in a first time slot adjacent a second time slot
6 defined as part of a guard period to reduce likelihood of interference caused by overlap of
7 time slots between the first cell segment and the neighboring cell segment.

1 23. (Original) The method of claim 22, wherein the measuring includes
2 measuring control signaling in time slots that are synchronized between the first and
3 neighboring cell segments.

1 24. (Original) A mobile unit for use in a mobile communications system,
2 comprising:
3 a transceiver to transmit and receive control and traffic signaling carried in
4 frames each having a plurality of time slots; and
5 a control unit adapted to receive control signaling carried in time slots
6 adjacent idle time slots defined as guard periods.

1 25. (Original) An article including one or more machine-readable storage
2 media containing instructions for controlling communications in a mobile
3 communications system having a plurality of cell segments, the instructions when
4 executed causing a controller to:
5 define a frame having a plurality of time slots;
6 synchronize time slots among the cell segments; and
7 allocate predetermined time slots as guard periods to reduce likelihood of
8 interference of signaling due to overlap of time slots between neighboring cell segments.

1 26. (Original) The article of claim 25, wherein the one or more machine-
2 readable storage media includes instructions that when executed further cause a controller
3 to:
4 communicate over a plurality of channels with the frame; and
5 provide a channel reuse pattern that is based on a plurality of channel
6 frequencies and a plurality of time groups, wherein signaling is transmitted in different
7 time slots in corresponding time groups.

1 27. (Previously Presented) The method of claim 1, wherein transmitting
2 control signaling in time slots adjacent time slots allocated as guard periods comprises
3 transmitting control signaling in time slots adjacent entire time slots allocated as guard
4 periods.

1 28. (Previously Presented) The method of claim 11, wherein communicating
2 idle periods in time slots comprises communicating idle periods in entire time slots.

1 29. (Previously Presented) The method of claim 1, wherein communicating
2 the control and traffic signaling in the frame having the plurality of time slots comprises
3 communicating the frame having the plurality of time slots in an uplink path.

1 30. (Previously Presented) The method of claim 1, wherein communicating
2 the control and traffic signaling in the frame having the plurality of time slots comprises
3 communicating the frame having the plurality of time slots in a downlink path.

1 31. (Previously Presented) The apparatus of claim 17, wherein the controller
2 is adapted to control communications of control and traffic signaling in the frame in an
3 uplink path.

1 32. (Previously Presented) The apparatus of claim 17, wherein the controller
2 is adapted to control communications of control and traffic signaling in the frame in a
3 downlink path.